

Diagram illustrating the primary structure of the insulin B chain, showing the sequence of amino acids and the disulfide bonds connecting the cysteine residues.

The sequence of amino acids (numbered 1 to 30) is:

- Gly
- Leu
- Gly
- Lys
- Ala
- Gln
- Cys
- Cys
- Ala
- Leu
- Trp
- Leu
- Tyr
- Asn
- Gln
- Cys
- Cys
- Ala
- Val
- Ala
- Gly
- Gly
- Gly
- Gly
- Gly
- Ala
- Val
- Ala
- Gln
- Asn
- Tyr
- Arg
- Gln
- Phe
- Arg
- COO⁻
- +H₃N

Disulfide bonds (S-S) are shown connecting the following pairs of cysteine residues:

- Cys₇ and Cys₁₆
- Cys₁₄ and Cys₂₉

Figure 1

EcoRI

pTZ sequence <-----GAATTCCGGCTCTAAAGCGAT

TCTGAGAGCAGTTTCTTATACACCAGCAGGAAGTCAACGAGCTGGATTAACAGGTGGGCATAAG
AGTTAAGATAAAATTTAACTTATATAACACATCGCTTAAAGTTTTTTTGTTTTAAAAACTTAAAAACAT
GGTAAAATTATATAAAAAACATAAGAAAGAGTGATTATATGGAATATGTAGTTATGATAATCATTTTATTA
GCACTTTTCTTTATTTTTTACTGTTTTCTTAAATACACGTTATAGTTTTGATGAAAAATGCTTAGTCTTAA
AATTTGGTTTATCTAAAACAGAAATTCCAATTAATCAAATAGTTAGTATTAAAGAGTCAGACAAGTATGG
AGTTGCAGATAATATCGATTATAAAATTGGTATGCCATATGCTCAACCAGATAGAATTGTTATTGAACT
ACAAATAAGCGTTTTTCTAGTTTTTTTTTAAATGGAGCTCAACAATTTATTCAAAGGTATAAAAGGGTTAGTG
TTTGAACATAAAAAAGTACCTTCTTACAATAGAAGGTACTTTTTTTGTATCTATAATTATTAAAAATTTAC
CTAAATTTTTTATCATTATTAATTCAAATAAATCCATAATAGTCAATTTTATTAGTGTATTACAACCAA

Bam HI (~900 bp) Bam HI

TTC GGATCC <-----cat-----> GGATTCGTGTATTACAACCAATTC TGTATTATTGATAGGTAATAAA
GTTTTTTTTCTATGATTTATGAACAAGTTTCCTTATAATTTTCAA
AAAAAATAAAAAATATGGTTGAATTTAGATTTATCTTCCTTTATATTAAAAAATGTAATCCGGATTGCAA

| Sublancin leader -----> Xho I

ACAAATGGGGAGGTTTTACAA **ATGGAAAAGCTATTTAAAGAAGTTAAACTCGAGGAACTCGAAAACCAA**

| Sun A ----->

AAGGTAGT GGATTAGGAAAAGCTCAGTGTGCTGCGTTGTGGCTACAATGTGCTAGTGGCGGTACAATTGG

Pst I |

TTGTGGTGGCGGAGCTGTTGCTTGTCAAACTATCGTCAATTCTGCAGA TAAACATTTGTAGAGGGAAT

ATTTTAAATATTCCTCATATTTAAAGCGGGGATTGAAATTGAATAAGAAAAAGAAATATGTTCACTACTA
AACAGTTTAATAGTCATGATTGTGGACTAGCTTGTATCTCGTCAATTTTAAAGTTTCATAACCTTAACCTA
TGAATTGATTTCTTACTAGACCTAATTGGGGATAAGGAAGGCTATAGTTTAAAGAGACTTAATTGTTATT
TTTAAGAAGATGGGGATAAAAACTAGGCCACTTGAATTGCAAGAAAATAAGACATTCGAAGCCCTAAAC
AAATAAAGCTCCCTTGTATAGCTTTGTTAGAAGGGGAGGAATATGGACATTACATAACAATATACGAAAT
TAGAAATAACTATTTACTTGTAGTGATCCTGATAAAGACAAAATAACTAAAATAAAAAAAGAGGATTTT
GAAAGTAAATTCACAACTTTATATTAGAAATTGACAAAGAGTCAATTCCTGAAAAAGAAAAAGATCAAA
AAAAACATTCCTTACTTTTTTTAAGGACATACTTTTTTAGAAATAAATTGATCGTTTTTTGTGATTTTATTGAC
TTCCTTGTTCGTTGTGGGTCTTGCTGAAGCTT----->pTZ sequence

HindIII

Figure 3

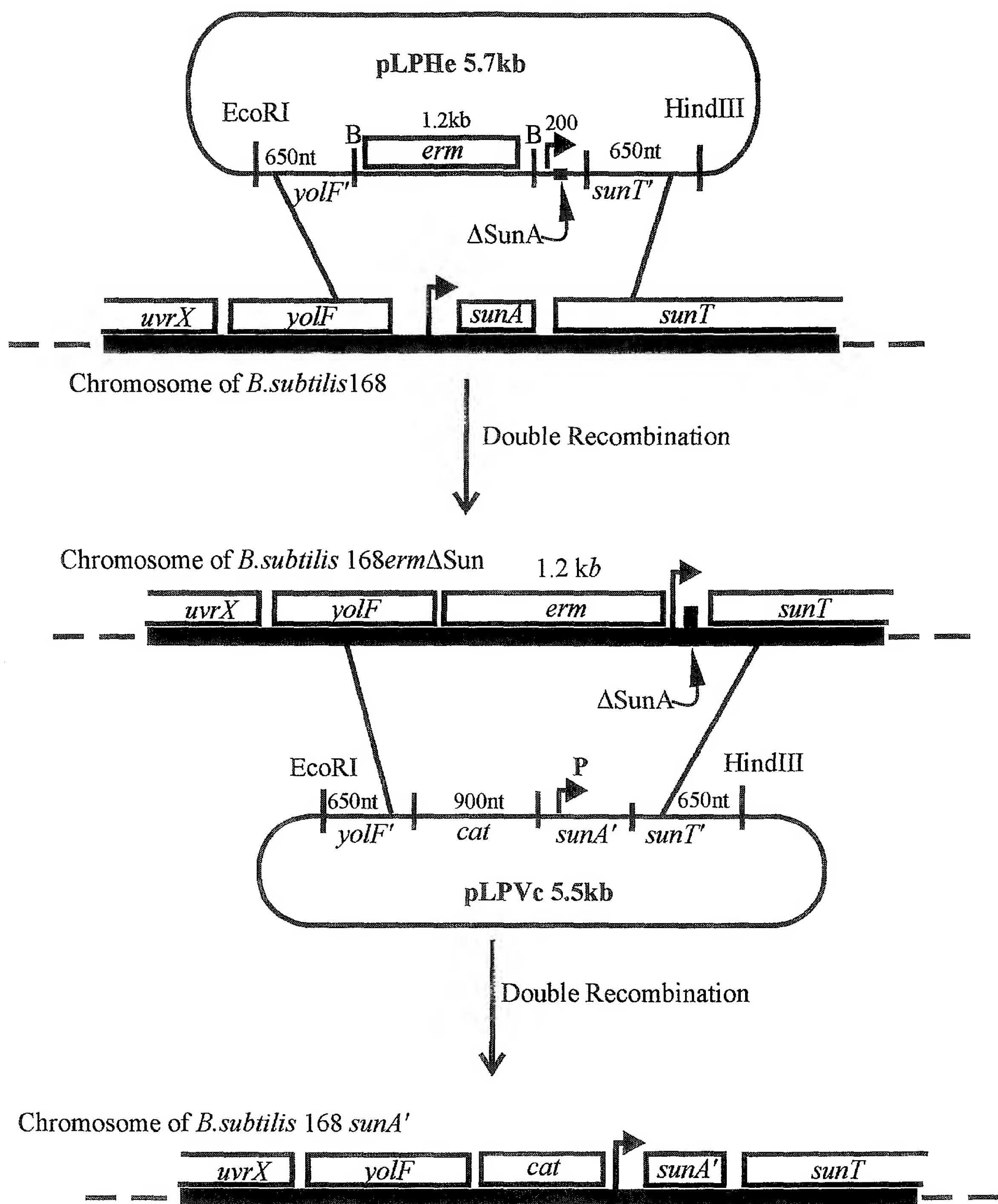


Figure 4

